INVESTIGATOR'S ANNUAL REPORT

National Park Service

All or some of the information provided may be available to the public

Reporting Year: 2002	**Park:** Shenandoah NP
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Permit#:
SHEN-2002-SCI-0012

Park-assigned Study Id. #:
SHEN-00241

Project Title:
LONG TERM RECOVERY OF FISH POPULATIONS AFTER A 500 YEAR FLOOD EVENT IN A SHENANDOAH NATIONAL PARK STREAM

Permit Start Date: May 22, 2002	**Permit Expiration Date** May 22, 2003
Study Start Date: May 22, 2002	**Study End Date** May 22, 2007

Study Status:
Completed

Activity Type:
Research

Subject/Discipline:
Fish / Ichthyology

Objectives:
The primary objective was to determine the characteristics of recovery (change in fish populations - density, growth, movements) in a mountain stream after a catastrophic flood and debris flow. We used radio telemetry and mark and recapture to monitor fish movements among different habitat types(eg. pools and riffles within flood affected and unaffected reaches). Recent research has focused on mark and recapture of trout marked within a 1-km reach.

Findings and Status:
After being completely wiped out following the June, 1995 event, brook trout recolonized the entire 1.6 km of flood-affected Satunton River. Blacknose dace also are present, but distributed more patchily (in low-gradient, relatively shallow pools). Brook trout growth was significantly greater in 1997 and 1998 in the flood-affected reach but returned to pre-flood levels thereafter. As evidenced by recovery of fish marked with PIT tags and radio transmitters (N=52), brook trout are capable of negotiating steep cascades in both down and upstream directions. Data from the fall 1999 and earlier were analysed and included in a MS thesis and a peer reviewed publication. This research was conducted in junction with studies of benthic macroinvertebrate production and water chemistry.

Recent findings suggest that trout live longer than the 3-years typically assumed. Recovery of marked fish up to 3-years post marking suggests that life spans of 5 or more years may not be uncommon in Appalachian mountain streams.

For this study, were one or more specimens collected and removed from the park but not destroyed during analyses?
No

Funding provided this reporting year by NPS:	Funding provided this reporting year by other sources:
0	7500
Fill out the following ONLY IF the National Park Service supported this project in this reporting year by providing money to a university or college	
Full name of college or university:	**Annual funding provided by NPS to university or college this reporting year:**
n/a	0